

REMARKS

By the present Amendment, claims 1-7 are cancelled and claims 8-19 are added. This leaves claims 8-19 pending in the application, with claims 8 and 14 being independent.

Substitute Specification

The specification is revised to eliminate grammatical and idiomatic errors in the originally presented specification. The number and nature of the changes made in the specification would render it difficult to consider the case and to arrange the papers for printing or copying. Thus, the substitute specification will facilitate processing of the application. The substitute specification includes no "new matter". Pursuant to M.P.E.P. § 608.01(q), voluntarily filed, substitute specifications under these circumstances should normally be accepted. A marked-up copy of the original specification is appended hereto.

Rejections Under 35 U.S.C. § 103

Claim 8 covers a method of filtering fluids comprising supplying unfiltered material through an input 22 to a plurality of stacked frame parts 16 and discharging filtrate through an output 24. The frame parts are filtrate plates 26 and filter frames 28 with the filter frames bordering on filter spaces 30. Filtrate cakes are formed in the filter spaces. Each filter space is sealed on its side facing the next filter frame part by a first laminar filter 32 and on an opposite side by a second filter medium 34. A washing fluid is fed sequentially through each set of the filter mediums, the filter cakes and the laminar filters. The washing fluid is then conveyed from the laminar filters to the output.

Claim 14 covers a device for filtering fluids comprising an input 22 for supplying unfiltered material, an output 24 for discharging filtrate and a plurality of stackable frame parts 16 including filtrate plates 26 and filter frames 28 between the input and output. Each filter frame borders on a filtrate space 30 for accommodating and forming a filter cake. First laminar filters 32 are mounted on the respective frame parts, face others of the frame parts and seal the filtrate spaces. Second filter mediums 34 border the filtrate spaces on its sides opposite the first laminar filters. Channel means conveys a washing fluid sequentially each set of the second filter mediums, the filter spaces and the first laminar filters, and then out the output.

By forming the method and forming the device in these manners, the washing fluid can be used in a subsequent filtration process. Specifically, the washing fluid, relative to each filtrate space first passes through the respective filter medium, then through the filter cake in that filter space, and then through the respective laminar filter before being conveyed from the laminar filter to the output. This washing fluid procedure provides an additional filter mechanism for removing by back washing valuable substances entrapped within the filter cake in a filtered manner, since the back washing fluid must pass through the first laminar filter before passing to the output.

Original claims 1-7 stand rejected under 35 U.S.C. § 103 as being unpatentable over WO 01/62482 A1 for the reasons set forth in the Preliminary Examination Report in connection with the International application on which this application is based. The International Preliminary Examination Report is incorporated by reference without any additional comments being provided.

The Preliminary Examination Report merely states that the subject matter of the original claims differs from the cited International application by the filtrate space 30 being closed on one

side by layer filter 32 and on its other side by another filter medium 34. Allegedly, the features of original claims 1 and 7 failed to result in "novel surprising technical advantages."

The cited International application has chambers 20 in which the filter cakes are formed, each having a filter medium 18 on each side of the chamber 20 during a normal filtration process. The unfiltered material is conveyed through passages 25 and 26 into chamber 20, with the filtered material passing through the filter mediums 18 to passages 27, 28 and 29 to be conveyed to the output. When the chambers 20 are filled up with cake material, the frames 11 of the cited International application divide to allow the cakes formed in chambers 20 to fall from the chambers, between the frames 11 and into cake collector 17 (shown in Fig. 1). After removal of the cakes from the chambers 20 of the cited International application, frames 11 are rearranged, as illustrated in Fig. 2, and washer liquid is conveyed through passages 29, 28, 28' and 27', through both filter mediums 18 simultaneously, into the chambers 20 and out passages 26 and 25. Thus, the washing fluid in the cited International application merely cleans the filter mediums, but does not perform an additional filtering process. The lack of an additional filtering process is caused by the washing fluid passing through both filter mediums 18 into each chamber simultaneously and in the same direction from outside the chamber to inside the chamber.

In contrast, the washing step recited in claim 8 and the channel means for conveying a washing fluid of claim 14 require a sequential passage for each filtrate chamber through the filter medium, then through the filter cake or filtrate chamber, and then through the laminar filter, before being conveyed to the output. In this manner, the washing process performed or capable of being performed provides an additional filtering such that remaining valuable substances in the filter cake can be removed, as described in this application. Particularly, in the biotechnology field, the

present claimed invention can be used to retrieve fine and expensive substances, such as proteins substances, albumin, gobuline, etc. for which the process and device disclosed in the cited International application are incapable. Accordingly, the specific feeding of the washing fluid in a sequential manner recited in claim 8 and the channel means providing the sequential conveying of the washing fluid recited in claim 14 are not disclosed or rendered obvious by the subject matter of the International application. None of the other cited patents cure these deficiencies in the International application.

Claims 9-13 and claims 15-19, being dependent on claims 8 and 14, respectively, are also allowable for the above reasons advanced. Moreover, these dependent claims are further distinguished by the additional limitations recited therein. Specifically, the deep-bed filter mediums and filter cloths of claims 9 and 15, the compressive forces and compression means of claims 10 and 16, the membrane pressurized by a gas or liquid of claims 11 and 17, the clamping of the laminar filter and the filter medium and the channels in the plates of claims 12 and 18, and the channels and channel means of claims 13 and 19, are not anticipated or rendered obvious by the International application, particularly within the overall claimed combination. No specific comments are provided relative to the features of these dependent claims.

In view of the foregoing, claims 8-19 are allowable. Prompt and favorable action is solicited.

Respectfully submitted,



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